Supplementary Note 1: The Methods on FDA-drug curation taken directly from Olivier T, Haslam A, Prasad V. Anticancer drugs approved by the US food and drug administration from 2009 to 2020 according to their mechanism of action. JAMA Netw Open. 2021;4:e2138793.


Supplementary Note 1:


Methods: This was a retrospective cross-sectional study of all anticancer drugs approved by the FDA from January 2009 through December 2020. The search was performed on June 9th, 2021. Approvals selected for the analysis needed to be an anticancer treatment, ie, drugs, including biologics. We excluded supportive-care treatments. We did include biosimilar approvals and approvals for other routes of administration for already approved drugs (eg, subcutaneous). The research was conducted using the FDA website and a previous systematic review (Sun, J. et al. BMC Syst Biol. 2017). Data related to the drug, the cancer type, and the approval basis were extracted from FDA labels, review documents, package inserts, and when necessary, from PubMed.

Supplementary Note 2:


Methods: We have collected anticancer drugs approved by the FDA from 1949 to the end of 2014 from multiple data sources. We started the collection of the anticancer drugs from anticancer drug-focused websites, including National Cancer Institute (NCI) drug information (1), MediLexicon cancer drug list (Medilexicon cancer drug list [http://www.medilexicon.com/drugs-list/cancer.php]. Accessed 13 Oct 2015), and NavigatingCancer (2). Then, we employed the tool MedEx-UIMA, a new natural language processing system, to retrieve the generic names for these drugs (3). Using the generic names, we searched Drug@FDA [4] and downloaded their FDA labels. For those that cannot be found in the drugs@FDA, we obtained their labels from Dailymed [5] or DrugBank [6]. From the drug label, we manually retrieved the initial approval year, drug action mechanism, drug target, delivery method, and indication for each drug. We further checked the multiple sources such as the MyCancerGenome [7], DrugBank, and the several publications [8, 9] to obtain the drug targets. For drug category, we manually checked the ChemoCare [10] to assign the drugs as cytotoxic or targeted agents. In our curated drug list, we did not include the medicines to treat drug side effects, cancer pain, other conditions, or cancer prevention.
References